## PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Bijan S. KHIRABADI, Ying C. SONG and Kelvin G.M. Former Group Art Unit: 1651 BROCKBANK

Application No.: Rule 53(b) Divisional of U.S.

Former Examiner: S. Saucier

Application No. 09/691,197, filed October 19, 2000

Filed: August 25, 2003

Docket No.: 102691.02

For: METHOD OF CRYOPRESERVATION OF BLOOD VESSELS BY VITRIFICATION

## **INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- 1. This Information Disclosure Statement is being filed (a) within three months of the U.S. filing date of this non-CPA application, OR (b) before the mailing date of a first Office Action on the merits in the present application. No certification or fee is required.
- 2. The references were cited by or submitted to the Office in parent applications Nos. 09/691,197, filed October 19, 2000, and/or 09/289,777, filed April 13, 1999, which are relied upon for an earlier filing date under 35 U.S.C. §120. Thus, copies of these references are not attached. 37 CFR §1.98(d).

William P. Berridge

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WPB:MLM/jam

Date: August 25, 2003

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				ATTY DOCKET NO.  102691.02  APPLICATION NO. Rule 53(b) Divisional of 09/691,197, filed October 19						
INFO	ORMATIO	ON DISCLOSURE STATEMENT		2000						
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		U.S.	PAT	ENT DOCU	MENTS					
EXAMINER INITIAL		DOCUMENT NUMBER		DATE	NAME			CLASS	SUB CLASS	
		5,145,769	8/9	2	McNally et al.					
		5,149,621	9//9	)2	McNally et al.					
		5,158,867	10/	92	McNally et al.					
-		4,559,298	1985	Fahy						
		4,494,385	85	Kuraoka et al.						
		5,122,110     06/19       5,217,860     06/19       5,472,876     12/19		1992	McNally et al.					
				1993	Fahy et al.					
				1995	Fahy					
		5,518,878 05/		1996	Wilkins et al.					
FOREIGN I			SN P	PATENT DOCUMENTS						
		DOCUMENT NUMBER		DATE	COUNTRY			CLASS	SUB CLASS	
				****						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)										
		Armitage, "Survival of Corneal Endothelium following Exposure to a Vitrification Solution," CRYOBIOLOGY, Vol. 26, 1989, pp. 318-327.								
		Bourne et al., "Human Corneal Studies with a Vitrification Solution Containing Dimethyl Sulfoxide, Formamide, and 1,2-Propanediol," CRYOBIOLOGY, Vol. 31, No. 6, 1994, pp. 522-530.								
		Dent et al., "Cryopreservation of Vein	Dent et al., "Cryopreservation of Vein Grafts," SURGICAL FORUM, Vol. 25, pp. 241-243, 1974.							
		Brockbank et al., "Cryopreserved Vein	n Trai	nsplantation	n," Journal of Cardiac Surgery,	Vol. 7	7, No. 2	, pp. 170-17	6, 1992.	
		Müller-Schweinitzer, "Cryopreservation Pharmacological Sciences; Vol. 9, 1				armac	ologica	l investigation	ons," Trends	
		Weber et al., "Viable Vein Graft Prese	ervati	on," Journa	l of Surgical Research 18, pp. 2	247-25	55, 197	5.	-	
		Bishop et al., "A morphological assess Journal of Cardiovascular Surgery 28,				d use	d for ar	terial replace	ment,"	
		Barner et al., "Fresh and Frozen Home	ologo	us Venous	Grafts for Arterial Repair," An	giolog	y 17, pp	o. 389-401, 1	966.	
EXAMINER					DA	TE C	ONSID	ERED		
Examiner:		citation considered, whether or not cance and not considered. Include copy					line th	rough citati	on if not in	

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	(Use s	several sheets if necessary)		APPLICANT(S) Bijan S. KHIRABADI, Ying C. SONG and Kelvin G.M. BROCKBANK						
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U.S. PAT				ENT DOCU	MENTS					
EXAMINER INITIAL		DOCUMENT NUMBER		DATE NAME				CLASS	SUB CLASS	
-		5,723,282	03/	1998	Fahy et al.					
	5,821,045		10/	1998	Fahy et al.					
				1999	Fahy					
				1999	Fahy et al.					
	6,194,137		02/	2001	Khirabadi et al.					
		FOREIC	ATENT DO	CUMENTS						
		DOCUMENT NUMBER		DATE	COUNTRY			CLASS	SUB CLASS	
WO 96/05727				29/96	WIPO					
WO 00/60935			10/	09/00	WIPO					
		WO 01/78504	10/	25/01	WIPO	WIPO				
		OTHER DOCUMENTS (Inc	cludir	ng Author,	Title, Date, Pertinent Page	s, etc.)				
		Sitzmann et al., "Dimethylsulfoxide-treated, cryopreserved venous allografts in the arterial and venous systems," Surgery, Vol. 95, No. 2, pp. 154-159, 1984.								
		Song et al., "Cryopreservation of the Common Carotid Artery of the Rabbit: Optimization of Dimethyl Sulfoxide Concentration and Cooling Rate," Cryobiology 32, pp. 405-421, 1995.								
		Wusteman et al., "The Effect of Cooling Rate and Temperature on the Toxicity of Ethylene Glycol in the Rabbit Internal Carotid Artery," Cryobiology 33, pp. 423-429, 1996.								
	Narayanan et al., "Successful Cryopreservation of Microvenous Allografts," Journal of Investigative Surgery, Vol. 5, pp. 155-160, 1992.  Ku et al., "Human Coronary Vascular Smooth Muscle and Endothelium-Dependent Responses after Storage at -75°C," Cryobiology 29, pp. 199-209, 1992.								/ol. 5, pp.	
									-75°C,"	
	Müller-Schweinitzer et al., "Sucrose promotes the functional activity of blood vessels after cryopreservation in DMSO-containing fetal calf serum," Naunyn-Schmiedeberg's Archives of Pharmacology, pp. 1-4, 1992.								DMSO-	
		Müller-Schweinitzer et al., "Functiona 196°C in a serum-free medium," Journ						ryopreservat	ion at -	
EXAMINER						DATE CO	NSID	ERED		
Examiner:		f citation considered, whether or not communicate and not considered. Include copy of					ine th	rough citati	on if not in	

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EXAMINER INITIAL		DOCUMENT NUMBER	1	DATE		NAMI	E		CLASS	SUB CLASS	
		5,873,254	02/	1999	Arav						
FOREIGN PATENT DOCUMENTS											
		DOCUMENT NUMBER DATE COUNTRY CLAS						CLASS	SUB CLASS		
						<del>.</del>					
	T	OTHER DOCUMENTS (Inch	uding	g Author,	Title, Date, Pe	rtinent Page	s, etc.)				
		Fahy et al., G. M., "Vitrification as an Approach to Cryopreservation," Cryobiology 21, pp. 407-426, 1984.									
		Chen et al., X. H., "Vitrification of Multicomponent Solutions by Cooling to Cryogenic Temperatures," Cryogenics Vol. 30 Sept. Supplement, pp. 541-545, 1990.									
		Fahy et al., G. M., "Some Emerging Principles Underlying the Physical Properties, Biological Actions, and Utility of Vitrification Solutions," Cryobiology 24, pp. 196-213, 1987.									
		Ren et al., H. S., "The Crystallization Kinetics and the Critical Cooling Rates for Vitrification of Cryoprotective Solutions," Cryogenics 1990, Vol. 30, September Supplement, pp. 536-540.									
		Guttman et al., Frank M., "Variation of Cooling Rate and Concentration of Dimethyl Sulfoxide on Rabbit Kidney Function," Cryobiology, 23, pp. 495-499, 1986.									
		Jacobsen et al., I.A., "Effect of Coolin	g and	d Warming	Rate on Glyc	erolized Ral	bit Kidney	s," Cry	obiology 19	:668, 1982.	
		F. Binette et al., "Expression of a Stab Human Articular Chondrocytes In Vitr								Adult	
		Y. Song et al., "Vitreous Cryopreserva pp. 296-299, 2000.	ition	Maintains	the Function	of Vascular	Grafts", Na	ture Bio	otechnology	, Vol. 18,	
EXAMINER	1						DATE C	ONSID	ERED		
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	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)											
	T. Fujita, MD, PhD, et al., "Successful Preversation of Human Skin by Vitrification", Journal of Burn Care & Rehabilitation, Vol. 21, No. 4, pp. 304-309, 2000.											
	B. Stone et al., "Cryopreservation of Human Articular Cartilage for Autologous Chondrocyte Implantation", Cryobiology, (Abstracts, 35 <sup>th</sup> Annual Meeting), Vol. 37, No. 4, pp. 445-446, 1998.											
	Abstracts, 36 <sup>th</sup> Annual Meeting of the Society for Cryobiology, "Vitrification of the Rabbit Cornea", Cryobiology, Vol. 38, pp. 310, 1999.									ogy, Vol.		
		D.E. PEGG et al., "Fractures in Cryopro PREV199799558143, Cryobiology, Vo					Database	Access	ion No.			
		}		<u> </u>								
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